

# 7<sup>TH</sup> INTERNATIONAL VETERINARY CONGRESS

September 04-05, 2017 | Paris, France

## Jagdish Lal Choudhary

Maharana Pratap University of Agriculture & Technology, India

### Synergic effect of different levels of dietary energy on nutrient utilization, work performance, physiological reactions and biochemical attributes of draught camel

An experiment was conducted on nine draught camels (7-9 years old and  $574 \pm 10.7$  kg BW) to study the effect of energy supplementation fed Moth Straw (*Phaseolus acontifolius* Jacq.) based diets along with various levels of energy in concentrate mixtures. The camels were randomly divided into 3 groups of 3 animals each and allotted 3 dietary treatments i.e. T1: 65% TDN in concentrate mixture, T2: 70% TDN in concentrate mixture and T3: 75% TDN in concentrate mixture along with dry moth straw fed ad libitum as sole roughage. The concentrate mixture was fed as per requirement of draught camels. The camels were subject to payload of 2.8 kg/kg body weight (18% BW) on a 2-wheeled camel cart. The camels covered 25.5 km distance in  $2.65 \pm 0.02$  to  $3.19 \pm 0.03$  hr at an average speed of  $1.71 \pm 0.09$  m/sec in a continuous work during winter season. The total dry matter intake (TDMI) was significantly ( $P < 0.05$ ) higher in T3 as compared to T2 and T1 groups while non-significant difference was observed between T2 and T1 groups. The DCP and TDN intake was significantly ( $P < 0.05$ ) higher in T3 and T2 groups as compared to T1 group. The digestibility of DM, CP and NFE was higher ( $P < 0.05$ ) in draught camels fed on higher energy concentrate mixture but there was non-significant difference between the treatment for digestibility of OM, CF and EE. The DE and ME contents did not differ significantly among the treatment groups. All draught camels were trained to pull the multipurpose tool carrier two wheeled cart. The draught was varied by varying payload on the two-wheeled camel cart and hydraulic dynamometer was used for measuring the draught. The draught (kgf) and power output (hp) was highest ( $P < 0.05$ ) in T3 as compared to other treatment groups. The maximum variation in physiological responses was noted at 2.8 kg/kg body weight (18% BW) on a two-wheeled camel cart. However, increase in rectal temperature, respiration and pulse rate was  $36.42 \pm 0.14$ ,  $37.73 \pm 0.13$ ,  $15.72 \pm 0.40$ ,  $18.92 \pm 0.13$ ,  $45.9 \pm 0.32$ ,  $49 \pm 0.02$  before and after carting. The blood serum was collected and analyzed to change in the biochemical attributes before and after carting. The serum glucose, lactate, cholesterol and aspartate transaminase activity changed significantly ( $P < 0.05$ ) during draught of camels. The results indicated that the nutrient utilization and draught performance was better in camels fed higher energy levels in concentrate mixture and covered distance without any hurdle and tolerate the work stress efficiently without any apparent ill effect on the health.

### Biography

J L Choudhary is working as Professor and the Head at Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, India. His experience includes various programs, contributions and participation in different events for diverse fields of study. His research interests reflect in his wide range of publications in various national and international journals.

[choudharyjl@yahoo.com](mailto:choudharyjl@yahoo.com)

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